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TITLE: Method and arrangement for setting the  
charge rate in a wireless pay phone

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INVENTOR-INFORMATION:

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ABSTRACT:

The destination zone of a call is defined (2) according to the prior art in a wireless pay phone, for example, by analyzing a selected phone number, and the present invention is characterized in that, additionally, the location of the pay phone is defined (3) and the originating zone of the

call is defined  
based on the location, and the charge rate is set based on at  
least the  
originating zone and destination zone of the call. The  
charge rate is  
advantageously set by means of a tariffing algorithm realized  
in the pay phone,  
which algorithm specifies several charge rate classes and  
corresponding  
parameter values, which set (7) a charge rate corresponding  
to a charge rate  
class. To set a charge rate class, first a distance class  
may be set (5) based  
on the originating zone and destination zone, and then a  
charge rate class may  
be set (6) based on the distance class and possibly other  
factors. The present  
invention makes it possible to realize a tariffing within a  
wireless pay phone  
itself, which functions sufficiently well and fairly even  
though the pay phone  
roams extensively, for example, in different countries.

9 Claims, 8 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 3

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Brief Summary Text - BSTX (5):

Today it is becoming increasingly common to use wireless  
pay phones in  
various vehicles, such as trains, boats or buses. It becomes  
difficult to set  
the charge rate of calls or other services if a vehicle in  
which a pay phone is  
located travels over a broad area, for example, in several  
different countries  
or, more generally, in several areas that affect charge  
rates, which are  
specified by call tariffing. The originating zone of a call  
made with a  
roaming wireless pay phone may also change from time to time,  
which should also

be taken into consideration in setting the charge rate. A user naturally expects the pay phone charge rate to be similar to that of his or her own mobile phone for a given call or service. A provider of a pay phone service also benefits if the ratio between the pay phone charge rate and the actual charge rate of a call or service is always nearly the same or at least under the control of the provider.

#### Brief Summary Text - BSTX (7):

The charge rate of a roaming pay phone has been set by loading a charge rate table into the phone. The charge rate table is based on either the charge rate of the predominant call originating zone or an average charge rate of the area in which the vehicle travels. In order to ensure that the right charge rates are applied, a new charge rate table should be loaded into the pay phone each time it enters an area with different tariffing for calls originating in that area, which may be a different country. The provider of the service should replace the table, and this in itself is difficult to arrange. It has been suggested that a new charge rate table could be loaded by means of a radio interface using a short message service or a modem. The quantity of information may be from a few kilobytes to 10 kilobytes, which would require a considerable amount of time to transfer. For example, 10 kilobytes is equivalent to 100 messages in a typical short message service, which would require at least 6 minutes to send. At least one minute of air time would be needed to send this information by modem. If it is arranged so that a new table is loaded in conjunction with certain handovers, this would result in a considerable number of extra data transfers, because handovers occur often in a

moving vehicle.

Detailed Description Text - DETX (3):

As shown in general in FIG. 1, setting of the charge rate in a wireless pay phone according to the present invention is based on first defining the destination zone of a call according to the prior art, for example, by analyzing the selected phone number in a customary manner in phase 2 of the method. Furthermore, in the method according to the present invention, the location of the pay phone is defined in phase 3 and the originating zone is defined based on the location. Definition of the location comprises retrieval of location information for use by a tariffing algorithm. Continuously updated location information is obtained from a mobile phone part included in the pay phone. In phase 4 the charge rate is set based on at least the originating zone and destination zone. As it was noted above, setting of the charge rate in different applications may be affected by other factors in addition to the originating zone and destination zone.

Detailed Description Text - DETX (4):

In the embodiment shown in FIG. 2, the method proceeds to phase 3 in the same manner as in the flow chart of FIG. 1. Then, a distance class is set in phase 5 based on the originating zone and destination zone. Setting a distance class reduces the number of alternatives in setting the charge rate based on different originating zone/destination zone combinations. In phase 6 the charge rate class is set based on the distance class and other selected factors, such as the day of the week and/or the time and/or a pay card. Setting the charge rate class further reduces the number of alternatives

resulting from combinations of different factors for which a charge rate needs to be set. In phase 7 a charge rate is set from parameter values corresponding to a charge rate class. This method produces a reasonable number of alternative charge rates, which set the charge rate for different calls and services with sufficient correctness and fairness.

Detailed Description Text - DETX (9):

Because factors other than originating zone and destination zone need to be taken into account in setting the charge rate, it is advantageous to further limit the charge rate alternatives by specifying a limited number of different charge rate classes. An example of this is presented by search table #4 of FIG. 7, in which six different charge rate classes are specified. In addition to seven different distance classes, factors such as the day of the week, the time and the type of pay card affect the setting of the charge rate class.

Detailed Description Text - DETX (10):

The weekday selection in the second column of the search table indicates the day of the week when the charge rate in question is in effect. The data may be one byte, for example, in which certain bits are ones to indicate days of the week. For example, 01000100 (LSB last) means that the alternative in question is selected on Sunday (second from the left) and Thursday (third from the right). The weekday is obtained in a pay phone by calculating it from the date read from a real time clock included in the pay phone. The weekday is advantageously calculated only once a day.

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455/407

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